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The best thing about the Grid is that it is unstoppable.

The Economist, June 21, 2001

Grid

The Grid

- Computing as a utility
  - A network of clients and service providers
- Client-side
  - Request computation or information and receive it
  - Does not matter where your data resides or what computer processes your request
  - Simplicity

The Grid

- Server-side
  - Ensure resource requests are serviced and resources are fully utilized
  - Make information available where and when it is needed
  - Deliver highly available service
- Enables virtualization of resources across
  - Servers in a data center
  - data centers in an enterprise
  - enterprises

Benefits of the Grid

- Better information faster
  - Perform more work with fewer resources
  - Spread work across resources
  - Access to resources on demand
- Faster response to changing business priorities
  - Instantly and dynamically realign IT resources as business needs change
- Reduced IT costs
  - Improve utilization of existing resources
  - Utilize less expensive commodity platforms

Technology Trends

- Blades: Every vendor offering them
  - Huge cost advantages
  - Software vendors have to enable usage
  - Dell PowerEdge, HP Proliant BL, Sun Fire Blades, Fujitsu Primergy BX
- Linux: Fastest growing OS
  - Commodity OS
  - Ready for blades today
  - Linux and blades naturally complement each other
- NAS, SAN, and IB provide storage access from any blade

Grid: The Next Big Thing

- Economic reality calls for Grid computing
  - Eliminate islands of underutilized resources
- Grid momentum is building
  - Major vendors such as Oracle offering Grid technolog
  - “Virtualization” and “utility computing”
  - Grid standards body (GGF) is in place
  - Globus toolkit is a Grid standards reference implementation
- Growing mindshare in IT departments

The Grid: The Next Big Thing

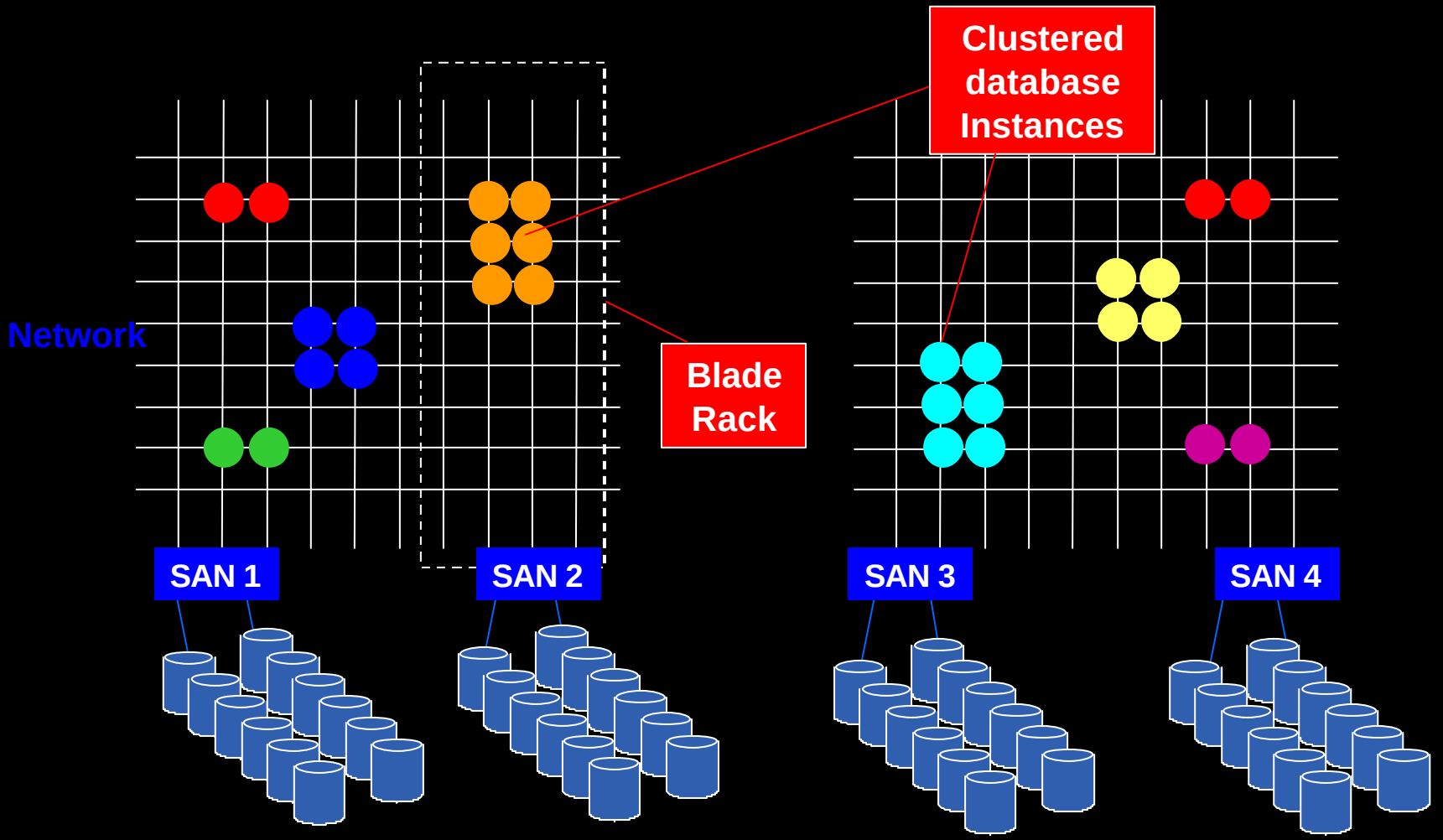
- The next phase of the Internet
  - Presentation: Web
  - Computation: Grid
  - Both disruptive, starting in research institutions, evolving as they move into the commercial sector
- All trends taken together make Grid unstoppable

Oracle9*i*

The Database for the Grid

- Oracle possesses key differentiators
  - Grids of standard-based components
  - CPU provisioning
  - Data provisioning
  - Portability
  - Operational
- Oracle9i supports Grid computing today
  - Align computing resources with business priorities

Grid Example



Best on Standard-based Components

- Grids of standard-based components will provide most compelling cost benefits
  - Dynamic computing architecture
  - Not autonomic, disposable
- Other databases cannot efficiently use standard-based components
  - Allocate for peak, allocate spares, get low utilization
  - Vulnerable to blade failure
- Oracle RAC enables high utilization on standard-based blade farms

Grow and Shrink with Demand

Real Application Clusters

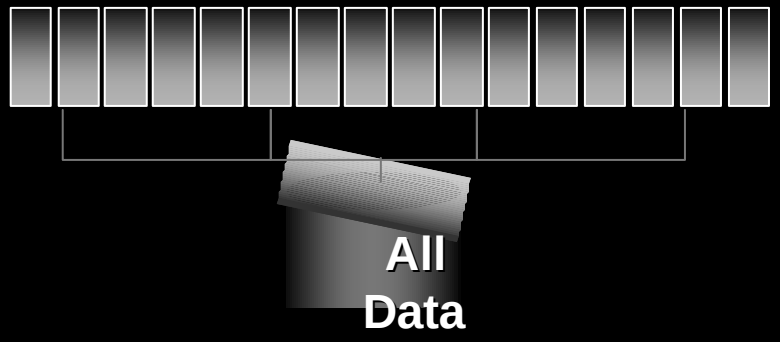
Runs real applications

Add blade while running

Drop blade while running

Allocate CPU needed now

Immune to blade failure



Shared Nothing

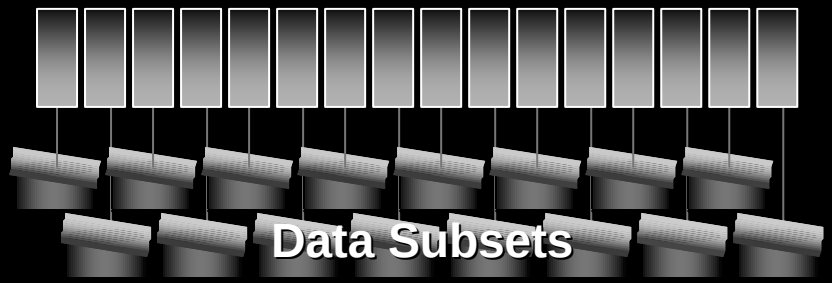
Runs Benchmarks

Add blade and reload/repartition

Repartition/reload and drop blade

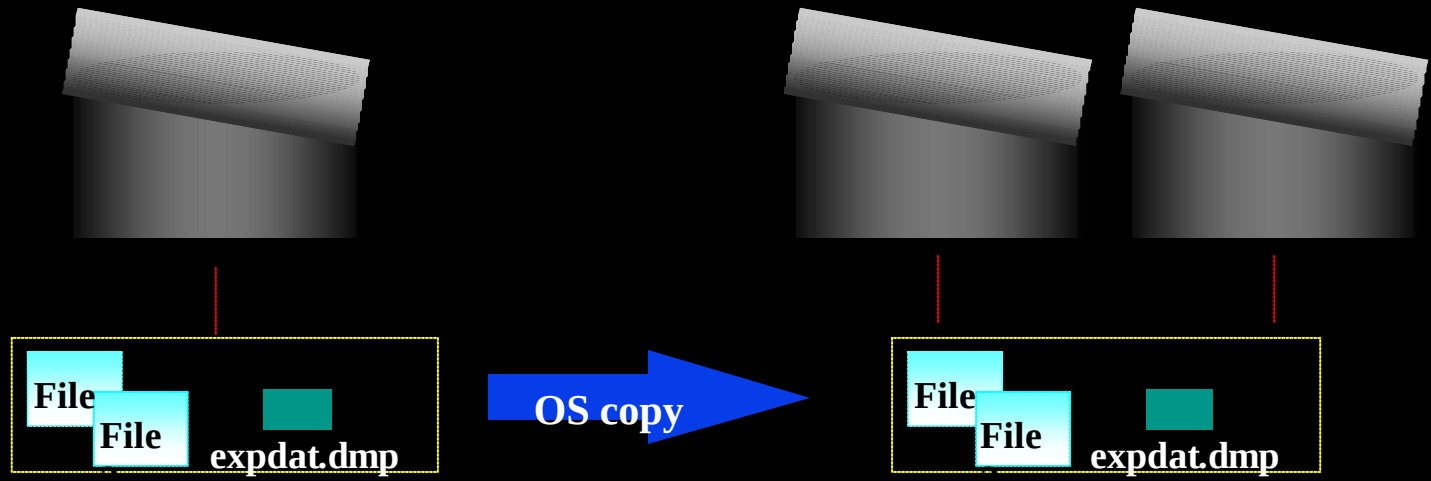
Allocate for peak

Crash when blade fails



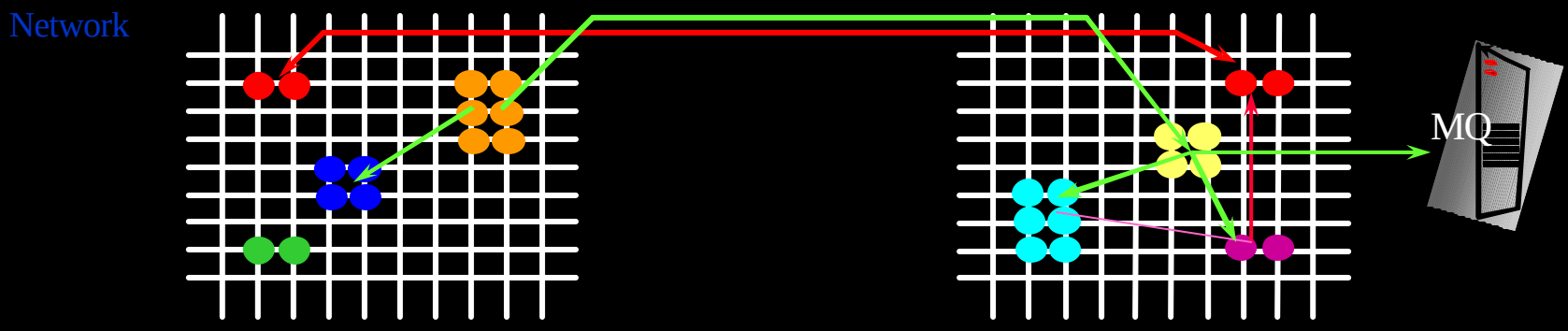
Transportable Tablespaces

- Oracle9*i* can unplug and plug database data files
  - Move and share data without unload and reload
  - Plug/unplug performance independent of tablespace size
  - Mount read-only tablespaces on multiple databases
  - Plug and play data fast



Oracle Streams

- Oracle9*i* can share information flexibly
  - Move data when and where needed
  - Share messages
  - Load downstream systems and incrementally maintain them
  - Notify or invoke user procedures on events
  - Subscribe to messages and database changes
  - Interoperate with other vendors



Distributed Database

- Oracle9*i* can federate all data sources
  - Access remote information wherever it is located
  - Update information with automatic transaction management
  - Move data without changing SQL
  - Materialize views locally to gain independence
  - Interoperate with other vendors

Operational

- Superior characteristics
  - Resource Manager: Fair resource provisioning across users
  - Scheduler: Provisioning work across time
  - Enterprise Manager: Cloning, patch management, user creation
  - Data Guard: Immune to farm failure
- Integrated: Lower development, deployment, management costs
  - Not custom integrated pieces and services
  - Half the operational cost

Portable

- Single code base for all platforms
  - Portable between Grid phases
  - Portable from SMP to Grid
  - Same application behavior, same APIs
  - Not different by OS, not limited to one OS
- Easy migration to Grid
  - Protects investment
  - Lets you migrate to the Grid whenever you are ready
- Oracle makes it easy to do Grid computing

Oracle Resonates with the Grid

- Not fashion, but an affirmation of Oracle's direction
  - Centralization and consolidation
  - Standard-based components
  - Cluster database
  - Unbreakable
  - Scalability and availability
  - Portability
- Grid computing is core values for Oracle

Summary

- The Grid is unstoppable
  - Technology and economic trends will accelerate adoption of Grid computing
- Oracle wants to promote Grid computing
  - Make it easy for the Oracle installed base to move to Grid computing
  - Data management and information sharing -- we're the experts
  - Drive solutions to Grid data management problems
  - Implement and support emerging Grid standards

More Information…..

- Grid on OTN
  - http://otn.oracle.com/products/oracle9i/grid_computing/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